From e-mail systems to e-business initiatives, Tivoli is making IT management a more efficient, more versatile, more effective tool of business. Our powerful products, services, and programs, along with a close working relationship with our parent company, IBM, have put us in a market leadership position with the global resources to help companies all over the world reach new levels of success.

A few of the Tivoli service components are discussed below:

TIVOLI® ENTERPRISE SOLUTIONS

Tivoli® Enterprise Solutions do more than just maintain your IT systems. They work together seamlessly to provide a secure IT environment. This unique capability assures maximum up-time at minimal cost, and that frees you up to focus on your business. However, many IT environments are extremely complex and contain so many interdependencies that implementing a comprehensive management system might seem as if it isn't an option.

With Tivoli, a comprehensive management system is possible through a flexible process called phased implementation. Tivoli addresses your immediate management needs by installing management solutions that are relatively simple to implement. These areas eventually become manageable, and as they do, you can launch more complex IT management initiatives that address other management needs.

By installing management solutions in phases, Tivoli ensures the successful implementation of a comprehensive IT management system for any environment regardless of size, complexity, or growth rate. The Tivoli components are:

- **Asset Management:** Automates the processes that track and protect your company's assets.
- **Availability Management:** Supports business applications and resources to maximize their availability for improving customer service levels.
- **Change Management:** Helps you manage the necessary changes to your dynamic computing environment.
- **Network Management:** Helps keep your network devices up and running, and your business competitive.
- **Operations Management:** Centralizes control of all back office operations.
- **Security Management:** Allows all security processes to be managed monitored from a central location.
- **Service Management:** Enables you to ensure high quality service to your internal and external customers.

- **Storage Management:** Allows you to deploy, protect your company's vital business information.
- **Tivoli Management Suites:** Allow medium-sized companies to solve a particular IT problem immediately, then phase in IT solutions one at a time, towards a goal of end-to-end enterprise management.
- **Tivoli IT Director Series:** Helps streamline IT systems for small and medium-sized businesses, removing many of the barriers that often stall growing companies.

Tivoli also has unique, targeted solutions that meet the IT requirements of specific platforms or key initiatives. Our e-business Management Solutions, for example, can smooth your transition to e-business, helping you overcome many of the IT challenges associated with connecting customers, suppliers, and business partners with your company's business processes. And our IT Solutions for OS/390® environments provide centralized, integrated, enterprise-wide management and ensure that your OS/390 systems are available, reliable, and productive.

Appendix A – K-12 References

Gwinnett County Public Schools, Lawrenceville, GA

In 1997 IBM was selected as Strategic Technology Partner for Gwinnett County Public Schools for a five-year period. Because of the number and complexity of projects underway at Gwinnett, IBM set up a Project Office to ensure consistency and focus of all projects. Below are some of the projects managed by the IBM Project Office:

Internet Access/Web Page Development - We agreed on a phased approach (1) phase 1 would be to develop the official Gwinnett Web site, upgrade all the Lotus Notes Servers to Domino, and install a UNIX Internet server and Intranet server, (2) phase 2 would be to develop web pages for each of the other departments, and (3) phase 3 would be to develop web pages for each of the (84) schools. Phase 1 of the project has been completed and the customer is very pleased. Phase 2 is now in progress and the departments are very excited about how the project is moving.

Mainframe Upgrade/Data Center Build/Move - This project involved the replacement of the ES/9000 with a new System/390, the replacement of VM and VSE with new versions, migration of the SQL Database, new DASD (9394 and 9395s), the building of a new data center and the move of the data center to the new building. This Project was completed in February of 1998. According to the customer, "This was the smoothest move we have ever had".

1997/1998 Workstation/Server Rollout - In an effort to raise their customer satisfaction as quickly as possible, Gwinnett decided to ensure that every school in the district would benefit from the technology dollars immediately. To do this they decided to replace one or more of the old labs in all the elementary and high schools (the middle schools were already complete). Each of these labs were integrated into the wide area network with internet access. Two new schools were also completely wired and integrated into the wide area network with a workstation in every classroom. This effort involved 2500 PCs and 80 servers. This project was completed in March of 1998. The schools are extremely happy.

Cabling Site Surveys - Now that Gwinnett had touched each of their schools, the next step was to get each of the elementary and high schools completely wired and integrated with a workstation in every classroom with internet access. To do this IBM had to assess existing wiring and meet with each school to determine their needs. The IBM Team assembled a team from Site and Connectivity, with Harry Reamer (Sub-contractor, known as Mr. IBM) overseeing the project. This was successfully completed in May and the customer was presented with a complete plan that included a budget for; (1) wiring and rewiring as necessary, (2) network hardware, (3) PCs and Servers and software, (4)

third party hardware and software, and (5) services. The customer was ecstatic when they saw that the number came in well under what they expected. The team was able to save Gwinnett money by ordering in gross, instead of on an as needed basis, which is the way the school system was used to doing business.

Network Design - To ensure that all technology projects would be successful, it was necessary to have a flawless network design. Not only did the IBM Team ensure that the network design was the best that IBM had to offer, but the team also worked closely with the Network Architect to ensure that the design was continually adjusted as necessary.

Strategic Technology Plan - 5 year Strategic Plan. IBM worked closely with Gwinnett to reassess their technology plan and to update ensuring major stakeholders involvement. This plan was presented to the cabinet on 3/20/98. This project has helped to make the teachers, parents, students, and community feel as though they are helping to shape their district technology plan. The Superintendent is thrilled with the plan. The Board adopted the plan and the Technology Department is now implementing the plan.

Y2K Readiness/Remediation Support - IBM managed Gwinnett's preparation for Y2K. As a part of this contract IBM converted all of Gwinnett's mainframe applications from CSP to Visual Age Gen as well as remediated them for Y2K.

District Contact: Jim Woolen, Executive Director of Technology and Planning (770-822-6500)
Other Contact: Katie Lovett, Director of Planning and Technology (770-822-6498)

Memphis City Schools, Memphis, TN

Memphis City Schools (MCS) is the largest school system in the state of Tennessee and the 20th largest metropolitan school system in the United States. More than 118,000 K-12 students are served in 103 elementary school, 14 middle schools, 6 junior high schools, 29 high schools and 7 special education centers. Memphis City Schools also operates 5 vocational/technical centers. There are 12,000 full-time and part time employees. The school system is the second largest employer in Memphis. The general operating budget for 1999-00 totaled $550 million. The projected per pupil expenditure for 1999-00 is $4,891.

In 1994 the district developed a long range Technology Plan, Realizing Vision 2000 through Technology, designed to support and reinforce all efforts to create a challenging, supportive, educational environment that resulted in higher levels of achievement for all students. The core of this plan was built around the major technology initiative from the Tennessee Department of Education's Office of Education Technology and the vision set forth in Memphis City Schools' Strategic Plan. Full implementation of this plan will result in the use of technology as a catalyst to restructure the way students learn, the way employees work, and the way the district manages its resources.

Over the past five years, the district has continued to implement projects from both the Strategic Plan and the Technology Plan. In order to achieve Goals and Objectives detailed in both plans, there are five major Information Systems that needed to be developed and employed throughout the district: (1) Financial System; (2) Personnel/Payroll System; (3) Student Information System: (4) Implementation of a Memphis City Schools' Data Warehouse; and (5) Instructional Systems. The first four systems were associated with the support operations of the district and thus are the responsibility of the Department of Business Operations. Developing the requirements, selecting and implementing the strategies and products for Instructional Systems are the responsibility of the Department of School Redesign, Training and Development.

In 1995 a decision was made to enter into a "Technology Business Partnership" that would provide expertise consulting Project Management and system management services to Memphis City Schools. The school district entered the partnership with IBM because of IBM's ability to address District wide issues. Memphis City Schools solicited a RFQ from interest firms/consortia. The objective of the RFQ was to provide a competitive means by which to select a Qualified Provider for a Technology Business Partnership with whom to negotiate a final master contract for a comprehensive program serving the Memphis City School District. It was important for MCS to capitalize in the investments and plans identified by the district for state of the art technology based on instructional delivery system over the life of the partnership. In selecting a qualified provider for a technology, it was important for MCS to find one that was totally integrated into the education business. The partner needed to have a firm understanding of the challenges of education children and the difficulties of providing comprehensive services to all schools in a large urban school district. IBM was selected through this

process as the vender of choice to provide a single point of contact in the complex technology environment of Memphis City Schools.

The original Technology Business Partnership agreement addressed very specific projects and items that were aligned with the Division of Information Technology. These were as follows:

- Hardware Maintenance (Apple, & IBM Computer Devices, Network Routers, Network Hubs and Switches)
- System Support (System/390, AIX/6000 UNIX)
- Software Support (MQ Series, SMS, ADSM OOS/390 Webserver, Lotus/Domino, DB2)
- LAN/WAN Network Support
- Project Office Support
- Flexible Financing
- Guaranteed Pricing and Cost Controls
- Cabling and Wiring Services
- MWBE Participation (IBM provides 51 percent M/WBE participation in all subcontracted services)

As technology has exploded in the district, so has the need for other divisions to contract for their particular technology needs. As a result, IBM and MCS have implemented numerous large and complex integration implementation projects. They are as follows:

- Human Resources, Finance, Payroll, and Purchasing Implementation
- Wide Area Network/Local Area Network (WAN/LAN includes workstation cabling and wiring, school infrastructure, the district wide fiber network service fees, the Administration Building server and the Teaching & Learning Academy server)
- Infrastructure and related E-Rate work - A fiber backbone WAN was implemented in 8 locations with 3 locations utilizing ATM technology on a pilot basis. IBM assisted with the installation of a Firewall and Web server expanding Internet access to all school locations. Current plans are to utilize E-Rate Universal Service Funds from the federal government to expand the ATM WAN to all school locations. Some of the benefits that the infrastructure has provided MCS include: Internet access to all classrooms; Distance Learning, Video Conferencing and Video Broadcasting; High speed e-mail for students, teachers, and administrators; centralized software distribution; telephones in classrooms; integration of all MCS voice, data and video networks.
- Distance Learning, Video Conferencing and Video Broadcasts

- IBM Reinventing Education Grant Performance-Based Portfolio Assessment (a way of measuring students progress toward mastering complex skills)
- Wired For Learning (resources from the Internet to design exemplary, on-line instructional activities for students)
- School Reform Efforts
- Professional Development and Training
- Literacy Grants
- Media Centers
- Help Desk – MSC has outsourced their help desk to IBM who provides level one support.
- IBM used the Total Systems Management engagement process, including analysis of business objectives and issue assessment of the current IT operational environment, gap analysis between required IT operations and present IT operations to support business goals creation of a custom IT out-tasking solution
- Workstation Roll-Outs - Services provided included Procurement, Pre-Delivery Preparation, Installation, Training, Asset Tracking, Cabling, Electrical and Support for the installation of over 6,000 workstations in 165 school locations.

Additional value added services coordinated through the project office were:

- Assistance in strategy and standards definition as MCS evolves into new areas of technology.
- System analysis assistance and recommendations for MCS support staff that may include access to IBM support specialists and consultants nationally.
- Assistance with configuration and implementation planning for complex projects and future growth.

The integration and management of multi-vendor, multi-platform distributed systems and networks, as well as the procurement of increased technology equipment and services required additional resources to meet the future technology needs of MCS. The IBM Technology Business Partnership provides the additional and appropriate resources required. The partnership augments the MCS district staff with not only additional resources but also skills that the district does not have. It is the strategy of MCS to contract for the management of certain projects and allow district staff to keep headcount under control and purchase resources as needed. This strategy also allows MCS to obtain highly specialized skills for certain tasks that the District would not want to maintain on the MCS staff. It also allows a transfer of knowledge to MCS employees while implementing new technologies to benefit educational and administrative uses of technology.

The implementation of this strategy has meant that MCS has the use of professional project managers to meet the demands of project schedule as needed. By using IBM to manage multiple projects, there is a strong focal point for coordination and responsibility. MCS is able to better enforce standards and prevent problems with systems compatibility across diverse projects.

District Contact: Linda Mainord, Director of Information Technology (901 325-5631)

Clark County School District, Smart Project, Las Vegas, NV

Clark County School District is the tenth largest school district in the Unites States, with over 200,000 students, 240 schools, and 2,000 student information system users. CCSD includes the city of Las Vegas, Nevada, one of the fastest growing metropolitan areas in the country. The district adds approximately 10,000 students, and opens an average of 10 new schools each year.

In July 1997, the Nevada Legislature passed Assembly Bill No. 469 (AB469), which established Phase II of the Nevada Statewide Management of Automated Record Transfer (SMART) initiative. The SMART initiative requires districts to electronically transmit student data to a statewide database managed by the Nevada Department of Education. AB469 also provides funding for districts in the State of Nevada to upgrade or replace their student information systems in order to meet the SMART reporting mandates.

In October 1997, Clark County School District (CCSD) contracted with IBM to provide project management and systems integration services to implement a new student information system district-wide.

IBM's initial task was to develop an Implementation Plan for the SMART project at CCSD. The new student system software selected by CCSD was NCS's Schools Administrative Student Information, Cross Platform (*SASIxp*). IBM developed a three-year implementation plan and schedule for CCSD. The three year timeline was dictated by the district's infrastructure status and upgrade schedule, resource and funding constraints, and the limitations of the current student system in meeting the SMART reporting mandates.

IBM is currently providing project management for the team of fourteen full-time staff (including both IBM and CCSD personnel) implementing the new student information system. Implementation at over 100 schools has been completed to date. The team's responsibilities include process re-engineering, software configuration, site installation, training, data conversion, and end user support. The project is closely coordinated with CCSD's facilities, telecommunications, purchasing, and information systems organizations, and is currently on schedule.

District Contact: Sal Cali, Executive Director, Central Information Systems (702-799-5040 x314)

West Des Moines Community School District (WDMCSD), Des Moines, Iowa

Under the IBM/WDMCSD Strategic Partnership, IBM provided K-12 specific expertise and consulting transitioning administrative processing from the Mid Iowa Regional Service Center into WDMCSD. The scope of this effort included installing the required hardware and software for supporting the district's administrative processing, establishing the required operations procedures and policies, extensive review and modification of current administrative processes and policies, documentation and training.

IBM provided project management and the services required in implementing the NCS suite of administrative products to include Financial, Payroll, and HR applications. In addition, IBM was responsible for integrating the Gateway Warehouse Management System with the baseline NCS products. The administrative functions addressed included: General Ledger, Purchasing, Accounts Payable, Inventory and Asset Management, Accounts Payable, Payroll and Human Resources. The project required a series of interfaces to include electronic submittal of direct deposit to ACH and to the District's State Teachers Retirement System.

Bowling Green State University

IBM teamed with Lucent Technologies for the Bowling Green State University enterprise voice, video and data infrastructure implementation in 105 buildings. In September of 1999, BGSU contracted IBM to implement a complete refresh of their network. IBM's responsibilities included working with BGSU in a phased approach. An initial technical assessment was done to review the current infrastructure, understand where all points of presence were, verify that existing drawings and blue prints were accurate on voice, video and data drops, conduit, raceway, power, etc. Once that was completed, the consulting phase commenced to ensure that IBM understood the vision and was able to construct the overall logical and physical design of the network and infrastructure needed to be to support this long-range vision for the enterprise. Implementation also occurred in a phased way in order to plan for the infrastructure elements, to accommodate the university's complex schedule and business needs, and to manage the "push/pull' of older technology without impacting the day to day operation and service the university provided. The total solution included the following:

Fiber WAN cabling for the entire 105 building campus

- Category 5, Level 7 Lucent Systimax voice/data 1000T cabling installed in all 105 campus buildings
- 155Mb ATM Backbone Network Switches
- 155Mb/25Mb ATM and 100Mb Ethernet edge network switches and hubs for buildings, classrooms and labs
- Lucent DefinityG3R PBX campus voice switch, voicemail and handsets
- Installation of indoor and outdoor cabling (Systimax GigaSpeed solution and long-term warranty) and Cisco network electronics supporting over 20,000 connections
- Campus-wide video capability
- Training Services
- Warranty service and maintenance
- Project Management services

The technology basis for the network design is high-speed Ethernet switching technology. At the core of the network, multiple gigabit-speed Ethernet links provide "wire-speed" interconnectivity using Cisco System's Catalyst 6500 Local Area Network (LAN) switch. Feeding the core switches are Ethernet switches linked via two or more gigabit links. Finally, all labs on campus contain stackable switches that uplink to the Ethernet and LAN switches via a gigabit link. Time Warner Cable is providing the

equipment and resources to install the CATV-CCTV (cable and closed circuit) systems. The CATV and CCTV systems will connect the residence halls and classroom video systems, respectively, to the new fiber infrastructure. The installation of pathways and ductwork are part of a separate public works contract.

Contact : Toby Singer, Bowling Green State University Phone: (419) 372-2911

New York City Board of Education

The Project Connect network design focuses on several key requirements identified by the Board of Education including Internet access, E-mail, administrative application access as well as low level network management for the 1218 school and district locations. Using the proposed Cisco design as an initial framework IBM has refined the design and made recommendations based on the identified Board of Education requirements. The design takes into consideration two types of locations, the Board of Education MetroTech site, housing SNA and Internet services and 1218 school and district locations.

The MetroTech Internet Network provides the necessary hardware and software required to supply Internet connectivity to the 1218 school and district sites. In addition to Internet connectivity the MetroTech Internet Network will also be hosting an E-mail hub and perform internal and external address resolution for the Board of Education domain. There will be 1218 sites designated as school and district sites, each of the sites will follow a designated template for hardware and software configuration. The site will have connectivity to the MetroTech Administrative Network for access to the ATS system and associated applications as well as to the MetroTech Internet Network for Internet, E-mail access and DNS.

Contact: Client has requested that discussions be arranged through the IBM Principal, Doug Vardakas, phone: (610) 578-2221.

Appendix B – Resumes

Appendix B includes resumes which provide a representative sample of IBM's industry and technical staff qualifications. These are representative of some the IBM personnel that could be assigned to the El Paso project.

Kenneth L. Null, PMP

PROFESSIONAL PROFILE

Ken Null is a Certified Project Management Professional, and an IBM Certified Professional in the IBM Global Services organization. As a Project Manager, Mr. Null specializes in Project Management of Complex Information Technology Roll-Outs in support of the desktop and end user environments. Previous engagements include developing and implementing the integration of new information system strategies supporting new hardware, software, facilities and end-user requirements. Key project management skills include developing the strategies and solutions for product acquisition, pre-installation, installation, and post-installation support for the desktop and the end user. Mr. Null has a proven track record as a professional project manager, demonstrated project management skills, and is recognized as a leader in the IBM project management community.

Mr. Null has prior experiences including; 11 years as a Project Manager, 2 years as a Customer Service Field Manager, and 12 years as a Technical Support Representative.

EXPERIENCE AND ACCOMPLISHMENTS

- Mr. Null successfully planned and managed a software roll out implementation and transition of help desk services for 1500 users across 15 locations in 3 states for an application development and maintenance client. Software products implemented include the Secure Inbound Network Emulation (SINE) product.

- Mr. Null successfully planned and managed a workstation implementation project including OEM equipment procurement, instructor led training, continuing education materials, equipment installation, and help desk services for a state agency consisting of 5000+ personal computers, 7600+ end users, and 23 sites across the state.

- Mr. Null successfully developed and implemented a deployment strategy for a large national convenience store/gasoline station corporation of three hundred (300) workstations across the United States.

Other successful information technology deployment projects by Mr. Null include:

- RISC/6000 Technology roll outs for a national food distribution firm and a national waste management firm.
- A Microsoft NT PC Server Roll-Out to one hundred sixty (160) sites for a Texas-based grocery chain.
- Personal Computer Bedside Information Systems Roll-Out to three hundred (300) rooms for a large hospital.
- Point of Sale Technology deployment for a retail grocery firm.

Connectivity Design and Installation Projects by Mr. Null include:

- Project Managed the Cable Design and Installation of a 1000-drop voice, data and video system for an insurance firm in Austin, Texas. Project included multiple buildings, multiple cities and phased client relocation.
- Project Managed the Design and Installation of a 48-strand fiber optic backbone for an energy firm in Houston, Texas. Project included multiple buildings in a campus environment.

EDUCATION AND BACKGROUND

Mr. Null has completed continuing education in:

Project Management Methodology
Local Area Networks LAN & Cable Design
And Multiple Vendor Local Area Networks

- Mr. Null is a Project Management Professional (PMP), a certification granted by the Project Management
- Institute and is a member of the Project Management Institute
- Mr. Null is an IBM Certified Project Management Professional
- Mr. Null is a Registered Communications Distribution Designer (RCDD), a designation granted by the Building Industry Consulting Service International (BICSI) and is a member of BICSI
- Mr. Null earned his Associate in Arts degree from the Houston Community College

Michael D. Hoevelman

PROFESSIONAL PROFILE

Mr. Hoevelman is an Information Technology Specialist with IBM Global Services. He has over fourteen years of operational, marketing support and consulting experience in the telecommunications industry. His particular areas of expertise are Wide Area Network engineering, installation, operation and management and Local Area Network transport. He is also experienced in the design and installation of dial-up access to Local Area Networks.

He has designed and implemented virtual private networks for voice and switched data traffic which required traffic engineering studies for local and long distance calls, and designed cable plant for data and voice networks. Mr. Hoevelman has recommended and installed telephone systems from small office key systems up to thousand line Private Branch Exchanges.

EXPERIENCE AND ACCOMPLISHMENTS

Mr. Hoevelman's most recent accomplishments are the installations of a fiber optic ATM based Wide Area Network and switched fast ethernet or gigabit ethernet network backbone for three independent school districts in Texas. One of the projects also included the design and installation of a Microsoft NT server network including an enterprise tape backup system, SMS, Exchange, Proxy, and a content filter for the Internet connection. Mr. Hoevelman is also experienced in the management of inside cabling installation and outside fiber optic cabling installation using underground or aerial construction methods.

In 1997 Mr. Hoevelman was lead in the evaluation, design and implementation of a TCP/IP based system that allowed dial access to the local area network of a major insurance and financial institution. The team that he led was also responsible for the documentation of all hardware and software installation procedures and for the training of first and second level support personnel. The analog and ISDN system allowed the company to remove an asynchronous terminal server and continue to develop client server based applications for the mobile employee.

While employed by a major Houston based oil company, Mr. Hoevelman was the lead engineer in the design and implementation of a 31 site TCP/IP network using both dial and dedicated circuit routers. He developed the TCP/IP subnetting scheme that used both the RIP and the OSPF routing protocols, as well as designed the inside cable plant for 19 of the locations. He also was a member of a 3 person team that wrote an RFP for voice and data services and evaluated responses that resulted in $1.5 million annual savings on a $12 million telecommunications services budget.

Mr. Hoevelman managed a Netware 3.12 network of 3 servers and 160 users at 4 locations, and designed and installed the bridged and routed IPX Wide Area Network to connect the sites of a Houston based telecommunications engineering firm.

For 18 years Mr. Hoevelman was a U.S. Army Reserve Signal Corps officer, and was the primary communications and information systems officer for a training division headquartered in Houston, TX. He was the design engineer and project manager for a *$500,000 telephone system and voice and data wiring project* for two US Army Reserve Centers. He also played a key role in the division's move from a typewriter and carbon paper entity, through a coaxial ArcNet Netware single server network, to the Microsoft NT multiple server TCP/IP based network in place today as a node of the worldwide Army Reserve data network.

EDUCATION AND BACKGROUND

BS, Electrical Engineering Technology
1984 University of Houston Central Campus

Product and Network Training
1994 Bridges and Routers – Advanced Computer Corporation (ACC)
1993 Remote Access & Dialup Routers – Telebit Corporation

US Army Signal Officer Basic Course 1978 Ft. Gordon, GA

US Army Signal Officer Advanced Course 1984

US Army Command and General Staff 1988

Guillermo (Bill) Merchan

PROFILE

Mr. Bill Merchan is a project manager in the IBM Global Services Site and Connectivity Services organization. His areas of expertise are Data Center Site Preparation/Relocation and Connectivity Services. Mr. Merchan is also experienced in rollouts, which include elements of site preparation, connectivity and equipment installations. Mr. Merchan joined IBM in 1980 and has been a Project Manager since 1991. He is a member of the Project Management Institute (PMI) and plans to be certified by July 1999.

IBM EXPERIENCE

Prior to his present position, Mr. Merchan served eleven years as an administrator in support of service and marketing offices, as well as in regional and headquarters locations in the United States. Mr. Merchan's responsibilities included equipment orders, installations, and movements.

Mr. Merchan was a member of a project management team that successfully implemented a Standard Managed Environment for a major U.S. oil company. He held geographic responsibility for the New Orleans Service Area, which consisted of 65 sites in 5 states as well as offshore platforms in the Gulf of Mexico, a multi-story office tower and a refinery. The scope of work included site survey and preparation, connectivity and installation of over 1,200 client workstations.

Mr. Merchan has successfully managed the relocation of several data centers. One of his larger projects was a 15,000 sq.ft. data center and 40,000 sq.ft. operations center for a major bank in New Orleans. He planned and implemented three of five project phases, which included the final stages of site preparation, the data center move (IBM and non-IBM equipment) tape libraries, and several hundred client workstations. Similar projects in scope included: a 6,000 sq. ft. data center for a large shipyard in New Orleans; a 5,000 sq. ft. data center for a food distributor in Baton Rouge, LA; and a processing center (600 client workstations) and data center for a multinational mortuary/cemetery management company in New Orleans.

Mr. Merchan successfully planned and implemented the rollout of 45 IBM RISC/6000 systems and related workstations and printers for a national business/vo-tech college. Scope included coordination of site surveys, connectivity and equipment installations at 45 schools from Florida to Alaska.

Mr. Merchan was a member of an IBM project management team that managed the installation of the connectivity infrastructure phase (fiber, Cat5, Coax) of a WAN/LAN project for an independent school district in El Paso, TX. Responsibilities included supervision and coordination of subcontractor activities, verification of adherence to codes and standards, and assuring the completion of 30 schools in 30 days as dictated by the contract.

Mr. Merchan served as the administrator of a Year 2000 Readiness project for a major U.S. oil company. Responsibilities were focused on the company's telecommunications systems in North America and included the setup of tracking and reporting mechanisms, maintaining product manufacturer documentation, and working with product and geographic managers to assure non-compliant products were upgraded or replaced by established deadlines.

OTHER EXPERIENCE

Prior to joining IBM, Mr. Merchan was an Operations Manager for a large New Orleans department store chain. He held several supervisory and managerial positions in a distribution center, including warehouse stock, shipping and receiving, and distribution.

EDUCATION AND BACKGROUND

Mr. Merchan is a Cuban-born, U.S. Citizen and is fully bilingual in English and Spanish. He holds a Bachelor of Science degree in Business Management from the University of New Orleans. Mr. Merchan has also has completed the BICSI Registered Communications Distribution Design (RCDD) course as well as various other IBM training in Project Management, Site and Connectivity, and Installation Planning. He is also active in several community activities, including the Dad's Club at his daughter's parochial school. He is also a "house captain" for Christmas in October, a project that once a year repairs and paints the homes of elderly or disabled persons.

Trung V. Nguyen

PROFESSIONAL PROFILE

Experienced Networking Consultant with concentration in network-based computing. Over fifteen years of Information Technology experience in roles ranging from network consulting, design, and implementation to service management.

Extensive knowledge of networking technologies from industry leaders such as Cisco, Novell, and Microsoft. Comprehensive experience with network assessments, routers and switches, ATM, network management systems, Internet firewalls, and application servers such as Web, Proxy and E-mail.

PROFESSIONAL EXPERIENCE

Assisted in an engagement to perform an IT Assessment for a major regional bank headquarters in Houston. Roles included developing interview guides, assessing the existing 3000-user, 180-location networking environment including LAN, WAN, Novell, Citrix & Microsoft servers, network management system, IT functions and processes. Engagement resulted in tactical and strategic recommendations that will provide the client with guidelines for improving the overall IT organization.

Lead an engagement to convert a 4500-node campus network from a multi-vendor Ethernet & ATM network to a Cisco-only Gigabit & Switched Ethernet network for a major hospital located in Houston. Roles included assisting with the network design, developing the test lab and test procedures, developing configuring procedures, leading network migration, configuring access restrictions to external vendors, and assisting with advanced troubleshooting. The new network will provide 7/24 access to critical patient information and standard office automation applications with full redundancy.

Helped developed a process to configure and install Microsoft Windows NT Servers for a major energy company located in Houston. The process included procedures to configure the servers using the IBM CSC Center in Atlanta to on-site installation of the servers at various client locations throughout the US and Canada by IBM field engineers. The client benefited from the lower overall implementation costs by having the work performed by the local IBM resources while incurring minimum travel expenses. This also provided the customer with a framework that can to be used for future technology deployments.

Technical lead in an engagement to implement a 8000-node, 15-building Municipal Area Network (MAN) using Cisco ATM & Ethernet switches and routers for an Independent School District southeast of Houston. Roles included designing of the network architecture, developing the test lab and test procedures, configuring and installing of the equipment, implementing the network management system, installing the remote access server, implementing access lists, configuring the Internet firewall, and training the client's IT personnel on the new technology. The technology will provide access to

district-wide resources such as email and education materials in addition to Internet access for all students or staff members from any classroom or office. The district will be able to provide at-home or distance-learning education programs by utilizing some of the features of the network.

Technical lead in an engagement to implement a 10-building Municipal Area Network (MAN) using Cisco ATM & Ethernet switches for an Independent School District northwest of Houston. Roles included designing of the network architecture, developing the test lab and test procedures, configuring and installing the equipment, installing the network management system, implementing Microsoft Exchange email server, Proxy server, IIS Web server, NT File & Print servers, and training the client's IT personnel on the new technology. The new network enabled restricted access to the Internet from any PC or Macintosh in addition to having the ability of sharing information using email and Web servers. Additional benefits included centralized data depository for student records and library resources. System management was improved by using a centralized management system which includes software distribution and remote management.

Led an engagement to upgrade 500 PC's from the Windows for Workgroup platform to the Windows 95 or Windows NT Workstation platform for a major energy company. Roles included developing project and training schedules, testing of applications for compatibility issues, developing automated installation scripts, managing and training technical resources, and assisting with advanced troubleshooting problems. The engagement was completed within the scheduled period and forecasted budget. The new platforms enabled the client the ability to use newer 32-bit applications with reduced software failures that was caused by the previous operating system.

Provided consulting services to a mid-size contract manufacturer in Houston for a new WAN supporting Novell Netware 4.11. Developed the process to migrate a 50-node Netware 3.11 LAN and a WANG minicomputer networks to a Netware 4.11 network consisting of over 500 PC's located in four locations throughout the US. Resulted benefits included reduced technology support costs by using a centralized network management system using Novell Managewise and NDS, and the implementation a common desktop environment using Windows 95 & Microsoft Office. The client also improved communication with internal and external customers by using Microsoft Exchange email system.

INDUSTRY CERTIFICATIONS

- Certified as a Novell Master Certified Novell Engineer (MCNE)
- Certified as a Microsoft Certified System Engineer (MCSE)
- Certified as a Cisco Certified Design Professional (CCDP)
- Certified as a Cisco Certified Network Professional (CCNP)
- Certified as a Compaq Accredited System Engineer (ASE-Novell)
- Certified as a Citrix Certified System Engineer (CSE)

Steven M. Koch

PROFESSIONAL PROFILE

Mr. Koch is a Project Executive with IBM's Integrated Technology Services. He has more than 28 years experience in information technology and systems having held executive positions in federal and Texas state government.

PROFESSIONAL EXPERIENCE

Mr. Koch has served from July 1999 as a team member on an internal IBM project - Convergence Project Office - a collaborative initiative funded by the Strategic Outsourcing and Integrated Technology Services organizations with the mission to identify improvements in processes and procedures and recommend solutions to effect cost reductions and organizational efficiencies. Mr. Koch also serves as Project Management focal point and representative for the Southwest Region IT Consulting and Implementation Services organization. Responsibilities include serving as a member of the Integrated Technology Services Project Management Steering Council tasked to improve the skills and maturity of the project management community. In this role, Mr. Koch has participated as an active working member on three sub-projects with a keen focus on continuous project management improvement. These include conducting assessments to determine technical and professional maturity of project managers; developing improved processes and procedures to support and enforce IBM financial management requirements; and developing processes to qualify projects and determine requirements to assign a Certified Project Manager to a project based on selected criteria.

Mr. Koch served as the IBM Project Executive for the Austin Independent School District (AISD) Network Infrastructure Project from April 1998 to June 1999. The contract value was $25.3M. The scope of the project included installation of a cabling infrastructure at 72 schools, installation of public address systems, installation of video systems, development of electrical designs for base technology and service upgrades, installation of HVAC, provide network skills transfer and training, installation of telephony systems, installation of an Internet firewall, configuration and installation of NT and systems management servers, installation of data network electronics, installation of a network management system, creation of a pilot laboratory, and development of numerous designs including detailed logical and physical network design, network management, NT, Lotus Notes, ADSM, Firewall, and telephony. Mr. Koch had overall project responsibility including client relationship and was an invited member to the AISD Superintendent's Bond Implementation Forum.

Mr. Koch served as the IBM Project Executive for the New Jersey Department of Human Services One-Ease-E-Link (OEL) project. The OEL project encompassed functionality related to welfare programs and employment services in New Jersey and was an initiative sponsored by the Governor to facilitate one-stop services within the State. Mr. Koch had overall responsibility for project management and planning, subcontractor management,

implementation planning, and customer satisfaction. The scope of the project included providing third-party case management and benefits eligibility software statewide; Lotus Notes support and web design; training and education; and software distribution.

Mr. Koch served as the Acting Chief Information Officer for a $3 billion Texas State social services agency responsible for determining food stamp, AFDC, and Medicaid eligibility. Directed 475 employee department ($40 million budget) in the agency-wide development, implementation, maintenance and operation of information systems. Provided additional mainframe and network services to other state agencies on a cost recovery basis.

Mr. Koch served as the Chief Operating Officer for a large Texas State agency. Directed day-to-day information systems business. Managed the operational implementation of several major projects including Electronic Benefits Transfer (EBT) for AFDC and Food Stamps; Vendor Drug; and ARTS, a client-server accounts receivable application.

Mr. Koch served as the Chief Administrative Officer for a large Texas State agency. Directed 50 employee division responsible for departmental budgeting, strategic planning, policy development, procurement, contract management, and obtaining federal funds for information technology initiatives.

Mr. Koch served as a Management Analyst for the Data Center Associate Director for a large Federal agency. Performed systematic reviews to rate the effectiveness of organizational programs. Provided recommendations for service and operational improvements.

Mr. Koch served as a Telecommunications Manager for a large Federal agency responsible for four specialized groups totaling 44 employees providing support for telecommunications, timesharing and end-user computing, message switching, Western US regional claims distributed network, and development and maintenance of front-end processor software.

Mr. Koch served as an Operations Manager for a large Federal agency. Managed a staff of 95 employees responsible for operation of multiple large-scale mainframes, production support, hardware installation planning, and systems software maintenance.

Mr. Koch served as a Computer Performance Manager for a large Federal agency responsible for forecasting growth and future resource requirements. Managed a staff of eight employees.

Mr. Koch served as an Operations Manager for a large Federal agency. Managed a staff of 119 employees responsible for mainframe operations, telecommunications, production support, systems software maintenance, and a hospital clinical laboratory installation. Managed a nationwide on-line and batch claims processing network producing payments to veterans totaling 14 billion dollars annually.

Mr. Koch served as an Operations Manager for a large Federal agency responsible for providing claims processing and pharmacy services to the Western US. Managed a staff of 80 employees responsible for mainframe and telecommunications operations, production support, and operation of two remote hospital clinical laboratory installations.

Mr. Koch served as the Project Manager on a large Federal agency project for the operational implementation of TARGET, a nationwide on-line claims processing system serving 70 Veterans Administration Regional Offices in the United States.

Mr. Koch developed specifications for veteran benefits and financial applications including a national veterans records locator system. Responded to Congressional inquiries and General Accounting Office (GAO) studies regarding veterans benefits. Determined and implemented corrective actions. Performed business process operational analysis developing baseline practices; redesigned processes to meet performance targets; prepared organizations for successful implementation of changes; implemented redesigned business processes; and developed plans for continuous improvement.

FORMAL EDUCATION AND BACKGROUND

University of Texas at Austin, Business Administration
St. Edwards University (Austin), Psychology

Federal Manager Development Program (University of California at Berkeley)
Senior Federal Management Program (Office of Personnel Management)
Leadership VA (Veterans Administration Executive Management Program)
Texas Governor's Senior Management Program (University of Texas LBJ Graduate School of Public Affairs)
Project Executive Orientation (IBM Education)
Project Management Methodology (IBM Education)
Project Management Fundamentals (IBM Education)
Project Management Boot Camp (IBM Education)
Leadership in a Project Team Environment (IBM Education)
NWS Transition Management (IBM Education)
Financial Management for Project Managers (IBM Education)
Project Management Progress Maturity Guidelines (IBM WWPMI Education)

Terry Chamberlin

PROFESSIONAL PROFILE

Mr. Chamberlin has 20 years of experience with IBM, 16 of which are in software support for UNIX-based systems. Currently Mr. Chamberlin is providing technical services for customers who are implementing or integrating IBM Risc System 6000 processors into their computing environment. He has additional experience in internetworking and internet connectivity, and integration with other platforms and legacy computing environments. He has extensive experience with public education and university customers, state and local government, and public entities such as hospitals. He has also provided professional level training in both classroom and hands-on instruction.

PROFESSIONAL EXPERIENCE

Mr. Chamberlin has implemented internet connectivity for several large organizations from planning through production, including local area networks, wide area networks, multi-protocol routing and switching, domain name services, mail services, web services, firewalls and security, systems management, fault-tolerance, and application servers. He has provided these services to customers with a little as 50 users to customers with over 50,000 users, in both the public and private sectors.

Mr. Chamberlin has skills in providing operations consulting on RS/6000 processors for performance and reliability on heavily used network and application servers.

Mr. Chamberlin has implemented web and networking services with Lotus Domino, Netscape, Novell, Microsoft, and IBM products, and has extensive experience with IBM and other vendor firewalls in some very complex configurations. He has skills in IBM and Cisco routers and networking hardware.

He also has an understanding of IBM S/390 computing environments, and can implement SNA/VTAM communications with RS/6000 processors. He has done this at many universities, hospitals, and government agencies. He has also implemented SNA-over-IP communications for IP-transport-only networks.

He has led implementation efforts at several public school districts for district-wide network computing, and understands the education environment and current federal funding programs to develop and install networking infrastructure. His experience with teaching both IBM and community college computing classes has given him additional insight into the needs of the education environment. He has taught classes in AIX systems administration, networking, Novell operating systems, and hands-on skills transfer for Lotus Domino administration, introductory ADSM administration, domain name services, firewall, and networking.